

Interviewer: Eleanor Hu

Interviewee: Zhen Hu

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[Note: this interview was originally done in Chinese, and this transcript was translated by the interviewer Eleanor Hu]

Eleanor Hu

Hello, my name is Eleanor Hu, a second-year undergraduate at the University of Chicago. Today's date is the 18th of May, 2024. We're conducting an interview about energy development and its impact on people's life through Zoom. The interviewee is my Aunt, Mrs. Zhen Hu. Hi Mrs. Hu, please introduce yourself, like, your name, your age, and where had you grown up.

Zhen Hu

Hi, I'm Zhen Hu. I'm Eleanor's aunt, and I'm 50 years old. I grew up in a small village located in Hunan Province, China. I moved to Shenzhen with my husband in 2002, and I've lived here since then.

Eleanor Hu

Great. To start our interview, could you share some of your earliest memories related to energy use back in your hometown in Hunan?

Zhen Hu

Of course. I have many memories. I grew up in the 70s, and at that time, our house used a coal furnace for heating. You know, Hunan is pretty cold in the winter, and there wasn't anything like an air conditioner for heating back then, so we had to manually add coal to the furnace to burn for indoor heating. Sometimes we also used charcoal instead of coal. It depended on the relative price of coal and charcoal and the availability of supply. Also, if we needed to take a shower, we had to heat the water manually with coal. Heating the water really took a lot of effort and time. There were six children in our household, including me, so I remember that each of us could only take a short shower to save the limited hot water. We also used coal for cooking.

Eleanor Hu

It sounds that a large amount of coal and charcoal supply was needed. So how was this supply stored?

Zhen Hu

Well, I don't remember the details exactly, but I think there was a basement specifically for coal storage. For the supply, we employed some guys to deliver coal from nearby cities and towns every month. It was their job.

Eleanor Hu

Is this the same for all households in the village?

Zhen Hu

No, absolutely not. We were one of the wealthiest families in the village, so we seldom worried about our coal supply, and we had the money to employ coal delivery men. However, poorer families couldn't afford as much coal supply as us. When I was young, it was normal for young children and elders in other families to freeze to death during harsh winters.

Eleanor Hu

So you've talked a lot about heating. What about other energy usage, such as lighting and refrigeration?

Zhen Hu

There was oil lamp for lighting. And after the 90s, there started to be electricity and wires, but I had no idea how this electricity was generated. I guess it could have been oil. We bought our first refrigerator when I was around 10. Our family was one of the first households to own our own refrigerator. Other families shared a common refrigerator in the village leader's house. Before the refrigerator, there really wasn't the idea of "refrigeration," and we typically stored the food by hanging them for air drying.

Eleanor Hu

Wonderful. Let's move to the next question. As far as I know, you've witnessed the introduction of renewable energy sources in the village. What types of renewable energy were implemented?

Zhen Hu

The most significant renewable energy source was definitely solar energy. Just two years before I left my hometown, my brother, your uncle, paid to build a newer, much bigger house next to the original old house. My brother left the village earlier than I did and worked in Beijing, a big city. He learned about renewable energy there, tried it, and found it very useful, so he decided to implement a solar panel for us. The new house had a solar panel implemented on the roof, but we mainly used it for water heating because it was not that consistent and reliable. For indoor heating and cooking, we still used coal or natural gas. We were the first family to use solar energy in the village. After 2010, more and more households chose to implement solar panels if they could afford it because we told them it was convenient.

There were also windmills built not far from the village to generate electricity. Hunan had relatively rich wind resources.

Eleanor Hu

Can you describe any visible changes in the environment and daily life since the adoption of renewable energy?

Zhen Hu

Absolutely. I could feel that solar energy was significantly cleaner than coal. There was no smoke produced that could burn your eyes, and there was less soot and ash in the surroundings. This resulted in cleaner homes and streets, and the air quality was noticeably

better. Your grandfather had really bad respiratory health issues caused by long-term exposure to smoke. So the solar energy was definitely better for him.

It was also more convenient than burning coal and saved a lot of time. As I mentioned, heating water with coal took a lot of effort and time. It involved gathering coal, starting a fire, and then maintaining it, which took a considerable amount of time and effort. With solar panels, it became much easier and quicker. Solar energy systems can be set up to automatically provide hot water, freeing up time that we can now use for other productive activities or leisure.

Another significant change is the reduction in energy costs. Once we bought and established the solar panel, the ongoing costs of energy decreased substantially. We could save a lot of money from buying less coal. It also saved us a lot of storage space of coal.

One more important thing I noticed was that the adoption of solar energy has brought about a sense of pride and progress among the villagers. Embracing renewable energy is seen as a forward-thinking move that aligns with the country's progression and developmental goal.

Eleanor Hu

Very interesting. So before these positive changes brought by renewable energy sources, did your family have any concerns related to the introduction of new forms of energy?

Zhen Hu

Yes, we did have some concerns initially when we first heard about the renewable energy sources from my brother. We, especially the older generations like my parents, were accustomed to using coal for our daily energy needs. The idea of switching to a completely different energy source brought up several worries.

There was a concern about the reliability of solar energy. We wondered if the solar panels would be able to provide a consistent and sufficient amount of energy, especially during the winter months or on cloudy days. We were concerned about the cost effectiveness of the solar panel, given the high implementation cost it and the harsh weather in Hunan during winters. Our elders, in particular, were more hesitant to change. They had used coal all their lives and were skeptical about whether the new technology would be as effective or trustworthy. There was a certain comfort in sticking with what was known and reliable. We also had concerns about the maintenance of the new technology. Your uncle had attended college and worked in big cities, so he was educated about this new technology. However, your grandparents and I were not as educated, so we didn't have sufficient knowledge about it. Using coal was straightforward and something we knew well, but solar panels and their associated systems were unfamiliar to us. We wondered how difficult it would be to keep them in good working order and what we would do if something broke down. The fear of facing expensive repairs or replacements was real. This general lack of knowledge and information made it difficult to fully understand and trust the benefits and potential of switching to a renewable energy source. It took time for us to become comfortable with the idea.

Eleanor Hu

What about now?

Zhen Hu

Over time, as we learned more about the benefits and experienced firsthand the positive changes, these concerns already faded.

Eleanor Hu

That's great to hear, so how would you describe how the shift towards renewable energy affect the local community's perspective on energy sources?

Zhen Hu

There is now a greater awareness and appreciation for the environment. The visible improvements in air quality and overall cleanliness have made us more conscious of the environmental impact of our energy choices. This has fostered a deeper respect for natural resources and the importance of preserving them.

There was also a sense of self-sufficiency. Relying on solar energy means that we are less dependent on external sources of fuel, which can be volatile in price and availability.

Additionally, the economic benefits have reshaped our views on energy. The reduction in ongoing energy costs has been a significant relief for many families. We've come to understand that investing in clean energy is not just an environmental decision but a smart economic one as well.

There is also a growing sense of responsibility and forward-thinking among us. We are more open to adopting new technologies and practices that promote sustainability. This shift is particularly evident among the younger generation.

Moreover, the community's collaborative spirit has been strengthened. The transition to renewable energy has often required collective effort, from community meetings and shared projects to supporting each other in adopting new technologies. It was all about unity and cooperation to contribute to positive changes.

Eleanor Hu

That was such an insightful response. Really appreciate that. Now let's move to talk more about your experience with nuclear energy.

Zhen Hu

Of course. I'm very happy to share that. My husband has been working at the Daya Bay Nuclear Power Plant for around 20 years, but I might not be as professional as him, so maybe I could only provide some general ideas.

Eleanor Hu

That's totally fine. There will not be very technical or deep questions. They are pretty general.

Zhen Hu

Oh well, then that will be fine.

Eleanor Hu

Firstly, how did your husband come to work at the Daya Bay Nuclear Power Plant, and what were his initial thoughts about working in nuclear energy?

Zhen Hu

He studied nuclear engineering in college. He was very fascinated in that area. At that time, nuclear energy was a burgeoning field in China, and he saw it as an opportunity to be at the

forefront of technological and scientific advancement. After completing his Phd degree, he learned about the Daya Bay Nuclear Power Plant project, which was only the second nuclear power plant in China. He wanted to contribute to such a critical and pioneering endeavor of the country. His professor referenced him to a position there, and he was accepted as part of the team.

His initial thoughts about working in nuclear energy were a mix of excitement and cautious optimism. He was absolutely excited about the technological innovation and the potential. He said he was proud to be part of a project that promised to play a crucial role in the country's energy future and its efforts to reduce carbon emissions and reliance on fossil fuels.

However, he was also aware of the challenges and responsibilities. The safety concerns associated with nuclear power were always at the forefront of his mind, and of course, as well as my mind. The training and preparation required to work in such a high-stakes environment were intense but he was committed to his responsibilities.

In addition, he was very curious about the public perception of nuclear energy. We talked a lot about that in the first few years of his work because we knew that it was totally a novel idea for most Chinese. He knew that many people had reservations and fears about nuclear power, you know, we heard a lot about horrible nuclear accidents from news. As an advocate for nuclear energy, he felt a strong sense of duty to help demystify nuclear energy and to contribute to its safe and responsible development.

Eleanor Hu

You talked about the safety concern. Could you further describe it? And how was these concerns addressed among you?

Zhen Hu

We had a lot of serious discussions before he officially accepted this job because I was very worried about the working environment and potential risks associated with safety and health. I tried to talk him out of it, but he was very persistent. In the end, I decided to support him. One of the major concerns was the risk of radiation exposure. We were well aware of the health issues that could arise from prolonged exposure to radiation, such as an increased risk of cancer and other serious illnesses.

He assured me that there were sufficient protective measures and equipment that could minimize the exposure. The plant also offered regular health check-ups for all employees to monitor any potential impacts of radiation exposure. He would also share reassurances from his routine health checks to me.

The safety protocols and systems within the plant was also very comprehensive. Over time, seeing the comprehensive safety measures in place and my husband's adherence to them, my concerns began to lessen. I also learned more about the rigorous international standards and oversight that nuclear plants adhere to, which further reassured me of the plant's commitment to safety.

Eleanor Hu

Over the years, how has your and your family's understanding of nuclear energy changed?

Zhen Hu

There have been indeed a lot of changes. Initially, my knowledge of nuclear energy was quite limited and largely influenced by the general public perception. Like many, we associated nuclear energy with its potential risks, particularly the fear of radiation and the

catastrophic consequences of accidents. This kind of negative image was shaped by those horrible news about nuclear accidents, which made me consider nuclear energy as inherently dangerous.

Now I started to see nuclear energy through a more nuanced lens, recognizing not only its risks but also its substantial benefits. Like I just said, I understand more about the stringent safety measures in place. I also learn that nuclear energy produces minimal greenhouse gas emissions. Like renewable energy, it is a cleaner alternative to fossil fuels. My husband's stable employment and the plant's contribution to the local economy by offering a lot of manual jobs that don't require as much expertise also underscored the role of nuclear energy in supporting community prosperity.

There were also plant tours for the plant employees' family members. My son had attended a tour once and told me he had become very interested in how nuclear energy works. I really believe this kind of education was particularly valuable for the younger generations.

Eleanor Hu

In your opinion, what are the most significant benefits and drawbacks of nuclear power compared to renewable energy sources, in terms of their impacts on people's lives?

Zhen Hu

One of the biggest benefits of nuclear power is how reliable it is. My husband often talks about how nuclear plants can run continuously, providing a steady supply of electricity. Solar energy is not that reliable, especially in places with harsh weather.

However, safety concerns associated with nuclear power is still a big problem, although I'm now not as worried as I used to be. This is because I know that although the risks are rare, they can be very serious. And once the accident happened, the consequences would be unimaginably horrible. Accidents like those in Chernobyl or Fukushima are always in the back of my minds. Another drawback is the radioactive waste. It's something that needs to be carefully managed and stored because it stays dangerous for a very long time. This is a major issue that still needs better solutions.

Eleanor Hu

Looking back, how do you feel about the changes brought about by these energy developments?

Zhen Hu

Well, that's a tough one. I would say I have mixed but mostly positive feelings about the changes brought about by the developments in both renewable energy and nuclear energy. Starting with renewable energy in Hunan, I've seen firsthand the incredible impact it has had on our daily lives and our environment. The transition to solar energy has made a world of difference. It's been a significant improvement in our quality of life, making our village cleaner and healthier.

On the other hand, my husband's work at the Daya Bay Nuclear Power Plant has given me a unique perspective on nuclear energy. I've come to appreciate the immense potential of nuclear power and the contributions of those who work in the nuclear industry.

Combining these experiences, I feel that the developments in both renewable and nuclear energy have brought about positive changes overall. Renewable energy has made our local environment cleaner and healthier, while nuclear energy has provided a reliable and efficient source of power with relatively low environmental impact. Both have their challenges, but I

believe that using a mix of both can help us create a more sustainable and resilient energy future.

It's been a journey of learning and adaptation, but I'm hopeful that we're moving in the right direction for a better future.

Eleanor Hu

Speaking of hope, what are your hopes for the future of energy development?

Zhen Hu

Firstly, I hope that we continue to prioritize and expand the use of renewable energy sources. That's for sure. I hope that more communities, especially in rural areas, can access and benefit from renewable energy. So I hope the government could lower the cost and advance the technology to make those renewable energy more widely available and efficient. I hope these renewable energy sources could be applied in more areas, like public transportation.

Secondly, I hope that nuclear energy continues to develop in a way that addresses its safety concerns and waste management issues. Promotion of public education about nuclear energy's potential and safety can also help reduce fear and misinformation.

You know, now we are in a big trouble in terms of climate change, and I put most of my hopes in the young generation like you, so I do believe there should be more public education about the importance of cleaner energy. You guys are the generation that have the potential to find a solution and change the future.

Eleanor Hu

All right. Do you have any other things you want to add?

Zhen Hu

No, I don't think so.

Eleanor Hu

Great. So that's the end of our interview. Thank you so much for your time. It's such a meaningful conversation.

Zhen Hu

You are so welcome. Wish you good luck in your final project.

Eleanor Hu

Thank you. Bye

Zhen Hu

Bye.